

## 7.4 - Using substitution to solving a system of linear equations review (see p. 418)

Use substitution to solve the linear systems of equations for #1-15. (lined paper)

*talk to a friend  
see if  
you  
need  
help  
getting  
the  
right  
answer.*

1.  $2x + y = 2$   
 $x - y = 7$

2.  $2x + y = 5$   
 $x - y = 4$

3.  $3x - y = 5$   
 $x + y = 11$

4.  $3x - y = 2$   
 $x + 4y = 31$

5.  $2x - 3y = -2$   
 $4x + y = 24$

6.  $x - 2y = 12$   
 $3x - 2y = 4$

7.  $4x + 3y = -13$   
 $x + 4y = 13$

8.  $5x + y = -7$   
 $2x + 5y = 11$

9.  $4x - y = -8$   
 $2x + 3y = -18$

10.  $2x - 3y = 18$   
 $x + 2y = -26$

11.  $3x + y = 1$   
 $15x + 7y = -17$

12.  $x - y = 1$   
 $5x - 4y = 12$

13.  $3x + y = 2$   
 $x + y = 3$

14.  $2x - y = 3$   
 $\frac{1}{2}x - y = -3$

15.  $\frac{1}{3}x + y = 1$   
 $2x + 3y = 6$

Review: ch 3, 6 (and some algebra, geometry and Pythagoras review just for fun)

16. Simplify:  $(x+2)(3x-4) + (2x+1)(x-2)$   
 $= 3x^2 - 4x + 6x - 8 + 2x^2 - 4x + x - 2$   
 $= 5x^2 - x - 10$

17. Given  $x = 3$ . Find the value of  $k$  in  $\frac{x+k}{2} + 1 = 8$ .  
 $\frac{3+k}{2} + 1 = 8 \Rightarrow 3+k+2=16$   
 $5+k=16$   
 $k=11$

18. The circumference of a circle is 50 cm. Find its area to the nearest tenth. ( $C = 2\pi r$ ;  $A = \pi r^2$ )

$50 = 2\pi r$   
 $r = \frac{50}{2\pi}$   
 $r = 7.9577$   
 $A = \pi (7.9577)^2$   
 $A = 198.9 \text{ cm}^2$

19. The school flagpole is 14 m high. Using trigonometry (coming soon in ch 2!), a student finds the distance from the top of the pole to where she is standing (the hypotenuse) to be 27 m. Find how far the student is away from the base of flagpole to the nearest meter. (draw the triangle)

$14^2 + x^2 = 27^2$   
 $x^2 = 27^2 - 14^2$   
 $x^2 = 553$   
 $x = 23 \text{ m}$

Find the slope-intercept form of the equation of the line that passes through the point (4, 1) and has a slope of -5.

$y - y_1 = m(x - x_1)$   
 $y - 1 = -5(x - 4)$   
 $y - 1 = -5x + 20$   
 $y = -5x + 21$

Answers:

1. (3, -4)

2. (3, -1)

3. (4, 7)

4. (3, 7)

5. (5, 4)

6. (-4, -8)

7. (-7, 5)

8. (-2, 3)

9. (-3, -4)

10. (-6, -10)

11. (4, -11)

12. (8, 7)

13.  $(-\frac{1}{2}, \frac{7}{2})$

14. (4, 5)

15. (3, 0)

16.  $5x^2 - x - 10$

17.  $k = 11$

18.  $198.9 \text{ cm}^2$

19. 23 m

20.  $y = -5x + 21$